In a note published in the *Atti dei Lincei* (vol. xxvi., 2, p. 717) under the title "The Origin of Stereochemistry," Prof E. Paternò points out that in 1869, five years prior to the publication by Le Bel and van 't Hoff of the doctrine of the asymmetric carbon atom, he suggested that if *three* isomeric forms of the compound $C_2H_4Br_2$ actually existed, the fact could be explained by assuming the four affinities of the carbon atom to be directed towards the corners of a tetrahedron. This was the first occasion on which the hypothesis of the tetrahedral configuration of the carbon atom was definitely formulated. Although the validity of Prof. Paterno's claim has already been admitted in some quarters, it is not generally known to chemists that the conception of a tetrahedral carbon atom, the basis of modern stereochemistry, had been proposed earlier than the year 1874, when it was brought forward simultaneously by Le Bel and van t Hoff.

The whole of the mathematical and physical library of the late Prof. A. S. Herschel, F.R.S., and also works from the library of the late Mr. F. Moore, author of books on the Lepidoptera of India and Ceylon, are included in a catalogue just issued by Mr. T. Thorp, Guildford, Surrey, who offers the books for sale.

An enlargement by four diameters of a photograph of the moon taken by Mr. W. Rice with a Goerz telephoto lens, the exposure being three-fifths of a second, has been sent to us by Messrs. G. Philip and Son, Ltd. The photograph was taken twelve hours before the moon was full, and though the enlargement, which is 6 inches in diameter, is not remarkable for any details it shows of lunar features, it gives a real impression of our satellite as a ball in space, this appearance of relief being accentuated by the bright streaks radiating from the crater Tycho near the south lunar pole.

At the anniversary dinner of the Royal Society on November 30 last, Lord Dunedin bewailed the fact that few men of science make any attempt to describe their investigations in language which can be understood by men of culture without special scientific knowledge. This speech, as was pointed out in Nature (vol. lxxvii., p. 111), gave rise to a correspondence in the *Times*, in which the advantage of increasing interest in scientific work by making the results as widely known as possible was insisted upon in many quarters. A similar necessity has been recognised in America, and an attempt is being made at Columbia University to provide literature of the kind required. The Columbia University Press has arranged to publish in the form of pamphlets a series of twenty-two descriptive lectures in non-technical language of the achievements of science and modern scholarship. We have received copies of the first two pamphlets; the first, on mathematics, is by Prof. C. J. Keyser, and the second, on physics, by Prof. E. F. Nichols. A doubt may be expressed as to whether the language of these lectures will be simple enough for the public for whom they are intended. The pamphlets partake largely of the character of the Royal Institution lectures, reprints of which are often available in this country, and contain terms and ideas which, though simple enough to the reader with some training in science, present difficulty to the student whose education has been chiefly on literary lines. It will be interesting to learn later the extent of the encouragement received by the Columbia University Press. The price of the pamphlets is in every case to be 25 cents.

OUR ASTRONOMICAL COLUMN.

The Distortion of Photographic Films in Stellar Work.—In No. 1, vol. i., of the Publications of the Allegheny Observatory (Pennsylvania), Dr. Frank Schlesinger discusses the possibilities of error introduced into photographic star-measures by reason of the distortion undergone by the film during the process of development. He further describes some experiments and measures he has made in order to determine the magnitude of this error. By developing, drying, and measuring a negative in the ordinary way, and afterwards putting it through the developing, fixing, washing, drying, and measuring processes again, he has obtained the data from which he draws his conclusions. Briefly, he finds that this error is much smaller than the error of bisection for good star images, being of the order of one one-thousandth of a millimetre for the kind of plate employed.

Two Hundred New Double Stars.—Lick Observatory Bulletin No. 125 contains a list, and measures, of 200 double stars discovered by Prof. Aitken. This is the eleventh list of its kind, and the stars now announced bring the total of Prof. Aitken's published discoveries up to 1700. Nine fainter companions to previously known pairs are included in the present list, which also contains measures of the unusually bright and close pairs κ Ursæ Majoris and ν^2 Boötis (Aitken, 1585 and 1634) as follows:—

	Date	Angle	Distance	Mag.	Annual proper motion
κ Ursæ Majoris ...	1907·83 ...	283°·2 ...	0″·21 ...	4·0–4·2 ...	0″·079 in 211°·1
ν^2 Boötis	1907·55 ...	237°·0 ...	0″·09 ...	5·5–5·5 ...	0″·04 „ 246°

A New Astronomical Journal.—The members of the progressive astronomical society of Antwerp having expressed a desire for a publication which would give the various ephemerides, and a simple account of the astronomical phenomena to be observed from time to time, the council of the society has commenced the publication of the *Gazette astronomique*, which is to appear monthly, and is designed to fill the gap indicated; popular articles on astronomical subjects are also to appear. No. 1 (January 4) contains various ephemerides, notes on phenomena occurring during January, accounts of the recent transit of Mercury, and a series of notes dealing, respectively, with the planets, asteroids, meteors, comets, &c. The annual subscription for this useful publication is three francs, post free in all countries, and all communications should be addressed to "Gazette astronomique," Chaussée de Turnhout, 342, Borgerhout, Antwerp, Belgium.

The Study of Meteor Trains.—The *Monthly Weather Review* (U.S.A.), vol. xxxv., No. 9, contains a suggestive article by Prof. Trowbridge on the utility of the precise observations of meteor-train drifts for the determination of atmospheric currents at altitudes otherwise inaccessible. This altitude, of meteor trains seen at night, ranges from forty-five to sixty-five miles, and Prof. Trowbridge believes that the conditions of pressure and temperature at about fifty-five miles above the earth's surface are possibly peculiarly suitable for the production of trains; careful study may enlighten us as to these conditions. Several recorded trains are illustrated in the article and fully discussed, and the author suggests that valuable results may follow from an organised series of careful observations.

The Accuracy of Double-star Measures.—A paper by Prof. Doberck, appearing in No. 4229 of the *Astronomische Nachrichten* (p. 65, January 21), should appeal to double-star observers. In it the author gives the probable constant errors, and the residuals after applying these constant, or the mean, errors to the observations, in position-angle and distance for some fifty past and present observers. The probable errors are based on the comparison of the results of the various observations with the positions calculated from the orbits of thirty double stars recently determined by Prof. Doberck. The effects of difference of colour, which, as Prof. Doberck remarks, must be considerable, are not discussed in the present paper, but the same worker expects to deal with them later. The variations of the probable errors caused by increase of the distance between the components, and by

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greater differences of magnitude, are well shown in some of the results, although in other cases magnitude appears to have made no difference. Thus Admiral Smyth's results show a probable error in angle of $\pm 0''{\cdot}031$ below $3''$ and $\pm 0''{\cdot}049$ above $3''$, but it is not certain whether the magnitudes have any influence; there is no evidence of systematic error in the distances, but an average constant error of $\pm 0''{\cdot}073$ is indicated. Prof. Doberck states that these observations are of very great value. In the case of H. Struve the magnitude coefficient is probably considerable.

Forty-one New Variable Stars.—Circulars No. 134 and No. 135 of the Harvard College Observatory announce the discovery of forty-one variable stars. Of the sixteen announced in the former, two show remarkably large variations. One of these, D.M. −30°.2883, situated in Columba, decreases from magnitude 10·4 to below magnitude 15·0, whilst the other, D.M. −46°.14688, situated in Phœnix, ranges from 8·5 to less than the twelfth magnitude. The variations of a number of stars announced in Circular No. 129 have been confirmed visually, and of these TT Aquilæ is especially interesting on account of its brightness and probable colour changes. The second circular gives particulars of twenty-five newly discovered variables found in regions Nos. 24, 36, and 42 of the Harvard map. In this research the number of variables found to be of the Algol type has been a remarkable feature, and of the twenty-five now published, eight are probably of this, or of the β Lyræ, class. The large number of variables found in map 42 appears to be significant, and should be taken into account in any discussion of the region, which includes a large portion of the constellation Scorpio and the nebulous region in Ophiuchus.

AMERICAN ETHNOLOGY.

The American Bureau of Ethnology, with its usual energy, has lost no time in extending its operations over the new colonial possessions, the Philippines, and some West Indian islands. The most important contribution to the twenty-fifth volume of its reports, for 1906–7, is an account of a preliminary survey of Porto Rico and the neighbouring islands, conducted by Dr. J. W. Fewkes.

Porto Rico, the smallest of the Greater Antilles, is naturally linked with Venezuela by the chain of the Lesser Antilles, which stretch southwards to the mouth of the Orinoco. It lies within a region of volcanic disturbance, and it is possible that when it was first occupied by man it may have formed part of an isthmus connected with the South American coast. A temperate climate and a productive soil naturally invited colonisation. The fauna and flora are of the South American type, and many considerations support the conclusion that Porto Rico and the adjoining islands were peopled from the valley of the Orinoco. Thus the houses of the people of both these regions are similar in type, and we find no traces of stone buildings which would naturally have been erected by emigrants from the Maya or other Yucatan tribes. The use of cassava, a South American product, and the care which the primitive inhabitants of Porto Rico, like those of the Orinoco, devoted to the preservation of the skeletons of their dead, are facts pointing in the same direction.

Except in the interior of the island, few traces of the aborigines survive. The inhabitants were massacred by the Spaniards, who re-peopled the island with slaves from the Bahamas and negroes from Africa. From the intercourse of these people with their rulers a half-caste population sprang up. Thus the island at present is occupied by a mixed race, and the absence of a collection of the skulls of the aborigines renders it difficult to decide what their race character may have been. The accounts of their physique and character given by the early Spanish writers do not, however, conflict with the theory of their South American origin.

The relics of this forgotten race are to be found in the dancing plazas, shell-mounds, and caves scattered over the island. The character of their stone carvings and pottery indicates that they had reached a high grade of culture. The plazas were stone enclosures in which ceremonial dances were performed with the object of securing abundant rain and plenteous harvests, success in war, the cure of the sick, for commemoration rites of the dead, initiation and other ceremonies. They often contain water-worn stones, which Dr. Fewkes supposes to have been emblematic of flowing water, and to have been used in some form of mimetic magic to control the rain. Their religion was of the animistic and shamanistic type, and its ritual largely consisted in the worship of Zemis, a term which included their gods, symbols of deities, idols, bones, skulls of the dead—in short, anything supposed to possess magical power.

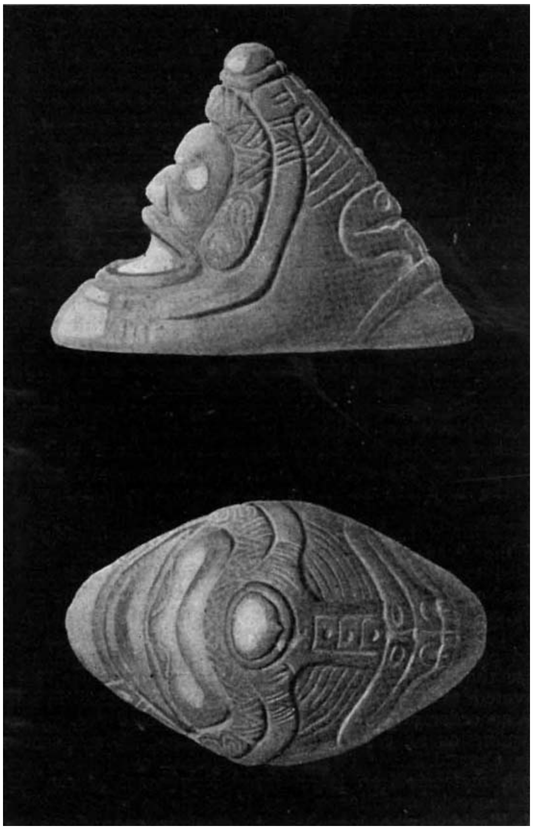

Fig. 1.—Lateral and top views of a three-pointed stone of the second type (Latimer collection); length 3 inches.

The most remarkable idols were those of the "three-pointed" anthropomorphic type (Fig. 1). The interpretation of these objects is obscure, and many theories of their origin have been suggested. Dr. Fewkes regards them as clan idols or tutelary totems, the difference in their form denoting different conceptions of the Zemi in the various clans. Equally curious are the zoomorphic or anthropomorphic pestles (Fig. 2), which were employed with mortars in the preparation of food, and the stone collars, which, according to one theory, were used in association with the "three-pointed" images, and with them formed a snake idol. This explanation Dr. Fewkes rejects; but, except that they must have been used for some religious or ceremonial purpose, their meaning is still uncertain.

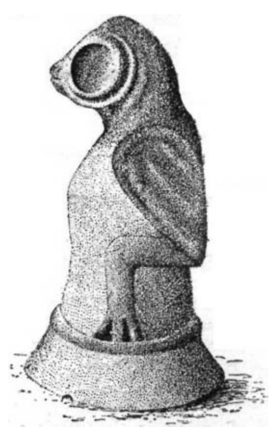

Fig. 2.—Bird-shaped pestle from Santo Domingo.

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